

We claim:

- 1 1. A method of providing authentication in a wireless communication system
2 comprising the steps of:
3 transmitting a first message to a first system, the first message comprising
4 a mobile identifier for a subscriber of the first and a second system indicator
5 indicating that the subscriber is attempting to gain access to a second system that
6 uses an authentication process different than an authentication process used by the
7 first system;
8 receiving a second message from the first system having shared secret data
9 associated with the subscriber;
10 generating an expected response to a unique challenge using the shared
11 secret data and an encryption algorithm; and
12 transmitting the expected response to the second system.
- 1 2. The method of claim 1, wherein the second system indicator includes at least one
2 of the following: an electronic serial number set to a default or null value; a
3 system capability parameter indicating that the subscriber is roaming in a GSM
4 based wireless communication system; or a system access type parameter
5 indicating that the subscriber is attempting to gain access in a GSM based wireless
6 communication system.
- 1 3. An logical network entity comprising:
2 means for transmitting a first message to a first system, the first message
3 comprising a mobile identifier for a subscriber of the first and a second system
4 indicator indicating that the subscriber is attempting to gain access to a second
5 system that uses an authentication process different than an authentication process
6 used by the first system;
7 means for receiving a second message from the first system having shared
8 secret data associated with the subscriber;
9 means for generating an expected response to a unique challenge using the
10 shared secret data and an encryption algorithm; and

11 means for transmitting the expected response to the second system.

1 4. The logical network entity of claim 3, wherein the second system indicator
2 includes at least one of the following: an electronic serial number set to a default
3 or null value; a system capability parameter indicating that the subscriber is
4 roaming in a GSM based wireless communication system; or a system access type
5 parameter indicating that the subscriber is attempting to gain access in a GSM
6 based wireless communication system.

1 5. A method of providing authentication in a wireless communication system
2 comprising the steps of:
3 receiving a first message at a first system, the first message comprising a
4 mobile identifier for a subscriber of the first and a second system indicator
5 indicating that the subscriber is attempting to gain access to a second system that
6 uses an authentication process different than an authentication process used by the
7 first system;
8 determining shared secret data associated with the subscriber using the
9 mobile identifier and the second system indicator; and
10 transmitting a second message from the first system having the shared
11 secret data.

1 6. The method of claim 5, wherein the second system indicator includes at least one
2 of the following: an electronic serial number set to a default or null value; a
3 system capability parameter indicating that the subscriber is roaming in a GSM
4 based wireless communication system; or a system access type parameter
5 indicating that the subscriber is attempting to gain access in a GSM based
6 wireless communication system.

1 7. An authentication system comprising of:
2 means for receiving a first message at the authentication system, the first
3 message comprising a mobile identifier for a subscriber of a first system to which
4 the authentication system is a part and a second system indicator indicating that

5 the subscriber is attempting to gain access to a second system that uses an
6 authentication process different than an authentication process used by the first
7 system;
8 means for determining shared secret data associated with the subscriber
9 using the mobile identifier and the second system indicator; and
10 means for transmitting a second message from the first system having the
11 shared secret data.

1 8. The authentication center of claim 7, wherein the second system indicator
2 includes at least one of the following: an electronic serial number set to a default
3 or null value; a system capability parameter indicating that the subscriber is
4 roaming in a GSM based wireless communication system; or a system access type
5 parameter indicating that the subscriber is attempting to gain access in a GSM
6 based wireless communication system.